



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/531,388

10/06/2005

Shiro Torizuka

2005-0640A

6528

513 7590 05/29/2008

WENDEROTH, LIND & PONACK, L.L.P.

2033 K STREET N. W.

SUITE 800

WASHINGTON, DC 20006-1021

EXAMINER

DELISLE, ROBERTA S

ART UNIT

PAPER NUMBER

3677

MAIL DATE

DELIVERY MODE

05/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,388	Applicant(s) TORIZUKA ET AL.	
	Examiner ROBERTA DELISLE	Art Unit 3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) 5,6 and 10-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's election of claims 1-4 & 7-9 in the reply filed on 4/3/08 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 & 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino et al. (U.S. Patent 5,419,948, "Yoshino") in view of Yasuhara et al. (U.S. Patent 6,221,179, "Yasuhara")

Regarding Claim 1, Yoshino discloses:

(Original) A screw or a tapping screw (**Abstract**) characterized in having [...] and a nitride layer in a surface part (**Abstract**)

Yoshino discloses a screw with a nitride layer but does not disclose an ultra fine structure of ferrite grains being 3 µm or less.

Yasuhara teaches:

... an ultra fine structure of ferrite grains having a 3 µm or less average grain size (**Abstract, Column 1 Lines 9-12, "average ferrite grain diameter of less than 2 µm" meets the "or less requirement"**) ...

Examiner notes that Yoshino discloses screw having a nitride layer. Yasuhara teaches the method of making steel with ferrite grains that are 2 µm or less. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Yoshino with a material made with

Art Unit: 3677

ferrite grains that are 2 μm or less as taught by Yasuhara to provide ductility, toughness, and fatigue strength to the screw.

Examiner notes that cited reference Torizuka et al. U.S. Patent 6,221,178 B1 April 24, 2001 specifically states “not larger than 3 μm .”

Regarding Claim 2, Yoshino discloses screw but does not disclose an ultra fine structure of ferrite grains being 1 μm or less.

Yasuhara teaches:

(Original) The screw or the tapping screw according to claim 1, characterized in the ultra fine structure of ferrite grains having a 1 μm or less average grain size. **(Abstract, Column 1 Lines 9-12, “average ferrite grain diameter of less than 2 μm ” meets the “or less requirement”)**

Examiner notes that Yoshino discloses screw having a nitride layer. Yasuhara teaches the method of making steel with ferrite grains that are 2 μm or less. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Yoshino with a material made with ferrite grains that are 2 μm or less as taught by Yasuhara to provide ductility, toughness, and fatigue strength to the screw.

Regarding Claim 3, Yoshino further discloses:

(Currently Amended) The screw or the tapping screw according to claim 1, characterized in that a nitride layer in the surface part has a 100 μm or less thickness. **(Column 2 Lines 56-60)**

Regarding Claim 4, Yoshino further discloses:

(Currently Amended) The screw or the tapping screw according to claim 1, characterized in that hardness of the nitride layer of the surface part is 450 or more in Vickers hardness **(Column 2 Lines 56-60, “surface hardness of (Hv) is 320 to 650 is within the range of 450 or more)**

Regarding Claim 7, Yoshino further discloses:

(New) The screw or the tapping screw according to claim 2, characterized in that a nitride layer in the surface part has a 100 μm or less thickness **(Column 2 Lines 56-60, “15-30 μm ” is within the range of 100 μm or less).**

Regarding Claim 8, Yoshino further discloses:

Art Unit: 3677

(New) The screw or the tapping screw according to claim 2, characterized in that hardness of the nitride layer of the surface part is 450 or more in Vickers hardness (**Column 2 Lines 56-60, "surface hardness of (Hv) is 320 to 650 is within the range of 450 or more"**)

Regarding Claim 9, Yoshino further discloses:

(New) The screw or the tapping screw according to claim 3, characterized in that hardness of the nitride layer of the surface part is 450 or more in Vickers hardness (**Column 2 Lines 56-60, "surface hardness of (Hv) is 320 to 650 is within the range of 450 or more"**)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERTA DELISLE ("Bobbie") whose telephone number is (571) 270-3746. The examiner can normally be reached on M-F 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Victor D. Batson can be reached on (571) 272- 6987. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3677

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor Batson/
Victor D. Batson
Supervisory Patent Examiner
Art Unit 3677

rsd